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Forecasters priorities for improving probabilistic flood forecasts

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Hydrological ensemble prediction systems (HEPS) have in recent years been increasingly used for the operational forecasting of floods by hydrometeorological agencies. The most obvious advantages of HEPS are that more of the uncertainty in the modelling system can be assessed; and that ensemble prediction systems generally have better skill than deterministic systems both in the terms of the mean forecast performance and the potential forecasting of extreme events. Research efforts have so far mostly been devoted to the improvement of the model systems themselves. However, results from a survey to gauge views of hydrological operational forecasters suggest that there are other areas of HEPS that need urgent attention; such as assessment of the full uncertainty in the forecast chain through multimodel approaches, developments and implementation of a robust skill assessment of the forecasts and most importantly further collaboration and knowledge exchange between operational forecasters and the model development community. We suggest a simple model to decide in which order to tackle the most urgent priorities to make the most of available resources.